

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for accumulating and evaluating electromagnetic phenomena of ~~at least one multiple power quality category~~ categories of a power distribution system, comprising a circuit monitor coupled to said power distribution system and accumulating data representing said electromagnetic phenomena, said circuit monitor being programmed to determine a power quality index for each of said multiple power quality categories, and a single overall power quality index for all of said power quality categories a circuit monitor that summarizes and trends said electromagnetic phenomena.
2. (original) The system of claim 1 wherein said circuit monitor is informed of its context with said power distribution system to provide for metering configurations and data analysis.
3. (original) The system of claim 1 wherein the determination of a power quality index is expressed as a single number for each said power quality category.
4. (original) The system of claim 3 which combines a plurality of said power quality indices from a plurality of said power quality categories into a single overall power quality index.
5. (currently amended) The system of claim 1 wherein said circuit monitor trends said data representing said electromagnetic phenomena, and said trending of data includes alerting said system when said power quality changes.
6. (original) The system of claim 1 wherein said at least one power quality category is weighted according to the load type present.
7. (currently amended) The system of claim 1 ~~6~~ wherein said power quality category ~~is~~ categories are selected from the group consisting of under voltage, over voltage, voltage imbalance, waveform distortion, frequency variations, voltage flicker, voltage sags, voltage swells, voltage interruptions, and transient overvoltages.
8. (currently amended) The system of claim 1 ~~6~~ wherein said power quality indices for power quality categories involving steady state conditions are based on the percentage of time said conditions exist during an evaluation period and the severity of such conditions, and

said power quality indices for power quality categories involving abnormal events are based on the number of such events that occur during an evaluation period and the severity of such events category is overvoltage.

9. (currently amended) The system of claim 1 6 wherein said single overall power quality index for all of said power quality categories is a weighted average of said power quality indices for said power quality categories power-quality-category is voltage imbalance.

10. (currently amended) The system of claim 9 6 wherein said weighted average is based on the nature of the power distribution facility and the load types in said facility power quality-category is waveform distortion.

11. (currently amended) The system of claim 1 6 wherein said single overall power quality index for all of said power quality categories is the lowest of said power quality indices for said power quality categories power-quality-category is frequency variations.

12. (currently amended) The system of claim 1 6 wherein said power quality category is categories are selected from the group consisting of, over voltage, voltage imbalance, waveform distortion, frequency variations, voltage flicker, voltage sags, voltage swells, voltage interruptions, and transient overvoltages voltage flicker.

13. (currently amended) The system of claim 1 6 wherein said power quality indices for power quality categories are based at least in part on data collected in response to alarm events 6 wherein said power quality-category is voltage sags.

14. (currently amended) The system of claim 1 6 wherein said power quality indices for power quality categories are based at least in part on data collected from networked circuit monitors that include branch circuit monitors category is voltage swells.

15. (canceled)

16. (canceled)

17. (currently amended) A system for evaluating and trending power quality of a power distribution system comprising a system of networked circuit monitors, wherein each of said circuit monitors accumulates and evaluates data representing the electromagnetic phenomena of at least one multiple power quality category categories of said power distribution system, said circuit monitor being programmed to determine a power quality index for each of said multiple power quality categories, and a single overall power quality index for all of said power quality categories.

18. (original) The system of claim 17 wherein each said circuit monitor is informed of its context with said power distribution system to provide for metering configurations and data analysis.

19. (original) The method of claim 17 wherein the determination of a power quality index is expressed as a single number for each said power quality category.

20. (original) The system of claim 19 which combines a plurality of said power quality indices from a plurality of said power quality categories into a single overall power quality index.

21. (currently amended) The system of claim 17 wherein said circuit monitor trends said data representing said electromagnetic phenomena, and said trending of data includes alerting said system when said power quality changes.

22. (original) The system of claim 17 wherein said at least one power quality category is weighted according to the load type present.

23. (currently amended) The system of claim 22 wherein said power quality category is categories are selected from the group consisting of under voltage, over voltage, voltage imbalance, waveform distortion, frequency variations, voltage flicker, voltage sags, voltage swells, voltage interruptions, and transient overvoltages.

24. (currently amended) The system of claim 22 17 wherein said power quality indices for power quality categories involving steady state conditions are based on the percentage of time said conditions exist during an evaluation period and the severity of such conditions, and

said power quality indices for power quality categories involving abnormal events are based on the number of such events that occur during an evaluation period and the severity of such events category is over-voltage.

25. (currently amended) The system of claim 22 17 wherein said single overall power quality index for all of said power quality categories is a weighted average of said power quality indices for said power quality categories power quality category is voltage imbalance.

26. (currently amended) The system of claim 22 25 wherein said weighted average is based on the nature of the power distribution facility and the load types in said facility power quality category is waveform distortion.

27. (currently amended) The system of claim 22 17 wherein said single overall power quality index for all of said power quality categories is the lowest of said power quality indices for said power quality categories ~~power quality category is frequency variations.~~

28. (currently amended) The system of claim 22 17 wherein said power quality indices for power quality categories are based at least in part on data collected in response to alarm events ~~category is voltage flicker.~~

29. (currently amended) The system of claim 22 17 wherein said power quality indices for power quality categories are based in part on data collected from networked circuit monitors that include branch circuit monitors ~~category is voltage sags.~~

30. (currently amended) The system of claim 22 17 wherein said power quality indices for power quality categories are based at least in part on data collected from networked circuit monitors that include branch circuit monitors ~~category is voltage swells.~~

31. (canceled)

32. (canceled)

33. (original) The system of claim 17 wherein said system comprises a software application running on a networked personal computer.

34. (currently amended) A method of accumulating and evaluating data representing electromagnetic phenomena of at least one multiple power quality category ~~categories~~ of a power distribution system, comprising

determining an individual power quality index for each of said multiple power quality categories, and

determining an overall power quality index for all of said individual power quality indices

~~summarizing and trending said electromagnetic phenomena in a circuit monitor.~~

35. (original) The system of claim 34 wherein said circuit monitor is informed of its context with said power distribution system to provide for metering configurations and data analysis.

36. (original) The system of claim 34 wherein the determination of a power quality index is expressed as a single number for each said power quality category.

37. (original) The system of claim 34 which combines a plurality of said power quality indices from a plurality of said power quality categories into a single overall power quality index.

38. (currently amended) The system of claim 34 wherein said circuit monitor trends said data representing said electromagnetic phenomena, and said trending of data includes alerting said system when said power quality changes.

39. (original) The system of claim 34 including weighing said at least one power quality category according to the load type present.

40. (currently amended) The system of claim ~~39~~ 34 wherein said power quality ~~category is~~ categories are selected from the group consisting of under voltage, over voltage, voltage imbalance, waveform distortion, frequency variations, voltage flicker, voltage sags, voltage swells, voltage interruptions, and transient overvoltages.

41. (currently amended) The system of claim ~~39~~ 34 wherein said power quality indices for power quality categories involving steady state conditions are based on the percentage of time said conditions exist during an evaluation period and the severity of such conditions, and

said power quality indices for power quality categories involving abnormal events are based on the number of such events that occur during an evaluation period and the severity of such events category is overvoltage.

42. (currently amended) The system of claim ~~39~~ 34 wherein said single overall power quality index for all of said power quality categories is a weighted average of said power quality indices for said power quality categories power-quality category is voltage imbalance.

43. (currently amended) The system of claim ~~42~~ 34 wherein said weighted average is based on the nature of the power distribution facility and the load types in said facility power quality category is waveform distortion.

44. (currently amended) The system of claim ~~39~~ 34 wherein said single overall power quality index for all of said power quality categories is the lowest of said power quality indices for said power quality categories power-quality category is frequency variations.

45. (currently amended) The system of claim ~~39~~ 34 wherein said power quality indices for power quality categories are based at least in part on data collected in response to alarm events 6 wherein said power quality category is voltage flicker.

46. (currently amended) The system of claim ~~39~~ 34 wherein said power quality indices for power quality categories are based in part on data collected from networked circuit monitors that include branch circuit monitors wherein said power quality category is voltage sags.

47. (currently amended) The system of claim 39 34 wherein said power quality indices for power quality categories are based at least in part on data collected from networked circuit monitors that include branch circuit monitors category is voltage swells.

48. (canceled)

49. (canceled)

50. (currently amended) A method of accumulating and evaluating electromagnetic phenomena of ~~at least one~~ multiple power quality category categories of a power distribution system, comprising a system of networked circuit monitors, wherein each of said circuit monitors ~~accumulating and evaluating said electromagnetic phenomena in a circuit monitor~~ accumulates data representing said electromagnetic phenomena, and is programmed to determine a power quality index for each of said multiple power quality categories, and a single overall power quality index for all of said power quality categories.

51. (original) The method of claim 50 wherein each said circuit monitor is informed of its context with said power distribution system to provide for metering configurations and data analysis.

52. (original) The method of claim 50 wherein the determination of a power quality index is expressed as a single number for each said power quality category.

53. (original) The method of claim 52 which combines a plurality of said power quality indices from a plurality of said power quality categories into a single overall power quality index.

54. (currently amended) The method of claim 50 wherein said circuit monitor trends said data representing said electromagnetic phenomena, and said trending of data includes alerting said system when said power quality changes.

55. (original) The method of claim 50 including weighing said at least one power quality category by the load type present.

56. (currently amended) The method of claim 55 wherein said power quality ~~category~~ categories are selected from the group consisting of under voltage, over voltage, voltage imbalance, waveform distortion, frequency variations, voltage flicker, voltage sags, voltage swells, voltage interruptions, and transient overvoltages.

57. (currently amended) The method of claim ~~55~~ 50 wherein said power quality indices for power quality categories involving steady state conditions are based on the

percentage of time said conditions exist during an evaluation period and the severity of such conditions, and

said power quality indices for power quality categories involving abnormal events are based on the number of such events that occur during an evaluation period and the severity of such events ~~category is over-voltage.~~

58. (currently amended) The method of claim ~~55~~ 50 wherein said single overall power quality index for all of said power quality categories is a weighted average of said power quality indices for said power quality categories ~~power quality category is voltage imbalance.~~

59. (currently amended) The method of claim ~~55~~ 58 wherein said weighted average is based on the nature of the power distribution facility and the load types in said facility ~~power quality category is waveform distortion.~~

60. (currently amended) The method of claim ~~55~~ 50 wherein said single overall power quality index for all of said power quality categories is the lowest of said power quality indices for said power quality categories ~~power quality category is frequency variations.~~

61. (currently amended) The method of claim ~~55~~ 50 wherein said power quality indices for power quality categories are based at least in part on data collected in response to alarm events ~~category is voltage flicker.~~

62. (currently amended) The method of claim ~~55~~ 50 wherein said power quality indices for power quality categories are based in part on data collected from networked circuit monitors that include branch circuit monitors ~~category is voltage sags.~~

63. (currently amended) The system of claim ~~55~~ 50 wherein said power quality indices for power quality categories are based at least in part on data collected from networked circuit monitors that include branch circuit monitors ~~category is voltage swells.~~

64. (canceled)

65. (canceled)

66. (original) The method of claim 50 wherein said method comprises a software application running on a networked personal computer.